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NEWS 24	MAY 30	DGENE, PCTGEN, and USGENE enhanced with new homology sequence search option
NEWS 25	JUN 06	EPFULL enhanced with 260,000 English abstracts
NEWS 26	JUN 06	KOREAPAT updated with 41,000 documents
NEWS 27	JUN 13	USPATFULL and USPAT2 updated with 11-character patent numbers for U.S. applications
NEWS 28	JUN 19	CAS REGISTRY includes selected substances from web-based collections
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=> e chromium picolinate
E1            1     CHROMITE,CR/BI
E2       200452     CHROMIUM/BI
E3            0 --> CHROMIUM PICOLINATE/BI
E4            1     CHROMIUM0/BI
E5            1     CHROMIUM0.8/BI
E6            1     CHROMIUM08/BI
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E7            1     CHROMIUM19/BI
E8            1     CHROMIUMALUMINUM/BI
E9            1     CHROMIUMANTHRACENE/BI
E10           1     CHROMIUMBORON/BI
E11           3     CHROMIUMCOBALT/BI
E12          15     CHROMIUMDI/BI

=> file caplus medline
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
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FILE 'MEDLINE' ENTERED AT 14:23:37 ON 01 JUL 2008

=> s chromium picolinate and insulin resistance
L1          54 CHROMIUM PICOLINATE AND INSULIN RESISTANCE

=> s l1 and py<=2002
L2          19 L1 AND PY<=2002

=> dup rem
ENTER L# LIST OR (END):l2
PROCESSING COMPLETED FOR L2
L3           15 DUP REM L2 (4 DUPLICATES REMOVED)

=> d l3 ibib abs 1-15

L3   ANSWER 1 OF 15  CAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:        2002:918225  CAPLUS
DOCUMENT NUMBER:         137:380028
TITLE:                   Antidiabetic compositions containing zinc, chromium,
                         and selenium compounds
INVENTOR(S):             Hayami, Kosuke
PATENT ASSIGNEE(S):      Fancl Corporation, Japan
SOURCE:                  Jpn. Kokai Tokkyo Koho, 4 pp.
                         CODEN: JKXXAF
DOCUMENT TYPE:           Patent
LANGUAGE:                Japanese
FAMILY ACC. NUM. COUNT:  1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     --------------      ----   --------    -------------------    --------
     JP 2002348244        A     20021204    JP 2001-154358         20010523 <--
PRIORITY APPLN. INFO.:                      JP 2001-154358         20010523
AB   The antidiabetic compns. contain zinc, chromium, and selenium compds.,
     including zinc picolinate, zinc gluconate, chromium chloride,
     chromium picolinate, and yeast prepns. for treatment of
     diabetes, especially insulin-resistant diabetes.

L3   ANSWER 2 OF 15  CAPLUS  COPYRIGHT 2008 ACS on STN DUPLICATE 1
ACCESSION NUMBER:        2002:451416  CAPLUS
DOCUMENT NUMBER:         137:168755
TITLE:                   Oral chromium picolinate improves
                         carbohydrate and lipid metabolism and enhances
                         skeletal muscle Glut-4 translocation in obese,
                         hyperinsulinemic (JCR-LA corpulent) rats
```

AUTHOR(S): Cefalu, William T.; Wang, Zhong Q.; Zhang, Xian H.; Baldor, Linda C.; Russell, James C.
CORPORATE SOURCE: Department of Medicine, University of Vermont College of Medicine, Burlington, VT, USA
SOURCE: Journal of Nutrition (2002), 132(6), 1107-1114
CODEN: JONUAI; ISSN: 0022-3166
PUBLISHER: American Society for Nutritional Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To evaluate whether chromium picolinate (CrPic) may aid in treatment of the insulin resistance syndrome, the authors assessed its effects in JCR:LA-corpulent rats, a model of this syndrome. Male lean and obese hyperinsulinemic rats were randomly assigned to receive oral CrPic [80 μg/(kg·d); n = 5 or 6, resp.] in water or to control conditions (water, n = 5). After 3 mo, a 120-min i.p. glucose tolerance test (IPGTT) and a 30-min insulin tolerance test were performed. Obese rats administered CrPic had significantly lower fasting insulin levels (1848±102 vs. 2688±234 pmol/L; P < 0.001; mean ± SEM) and significantly improved glucose disappearance (P < 0.001) compared with obese controls. Glucose and insulin areas under the curve for IPGTT were significantly less for obese CrPic-treated rats than in obese controls (P < 0.001). Obese CrPic-treated rats had lower plasma total cholesterol (3.57±0.28 vs. 4.11±0.47 mmol/L, P < 0.05) and higher HDL cholesterol levels (1.92±0.09 vs. 1.37±0.36 mmol/L, P < 0.01) than obese controls. CrPic did not alter plasma glucose or cholesterol levels in lean rats. Total skeletal muscle glucose transporter (Glut)-4 did not differ among groups; however, CrPic significantly enhanced membrane-associated Glut-4 in obese rats after insulin stimulation. Thus, CrPic supplementation enhances insulin sensitivity and glucose disappearance, and improves lipids in male obese hyperinsulinemic JCR:LA-corpulent rats.

REFERENCE COUNT: 68 THERE ARE 68 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2002:352757 CAPLUS
DOCUMENT NUMBER: 137:78305
TITLE: Effects of chromium picolinate supplementation on insulin sensitivity, serum lipids, and body weight in dexamethasone-treated rats
AUTHOR(S): Kim, Dong-Sun; Kim, Tae-Wha; Park, Il-Kyu; Kang, Ju-Seop; Om, Ae-Son
CORPORATE SOURCE: Departments of Internal Medicine, Clinical Pathology, Hanyang University College of Medicine and College of Ecology, Seoul, 133-792, S. Korea
SOURCE: Metabolism, Clinical and Experimental (2002), 51(5), 589-594
CODEN: METAAJ; ISSN: 0026-0495
PUBLISHER: W. B. Saunders Co.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Chromium (Cr) is essential for the regulation of insulin action, and Cr supplementation has been studied as a potential therapy of insulin resistance and lipid abnormalities. Corticosteroid treatment is well known to cause the abnormality of carbohydrate metabolism Recently, it has been reported that corticosteroid increases urinary loss of Cr, and Cr supplementation recovers steroid-induced diabetes mellitus. In this experiment, rats were treated daily with dexamethasone (DEX) (0.2 mg/kg, i.p. [IP]) for the first 7 days and were further treated with DEX plus either chromium picolinate (CrP, 30 mg/kg/d) orally or a placebo for a period of 14 days. At the end of experiment (D21), the control

rats, which were treated only with DEX weighed 320 g (80% of initial weight) on average, but CrP-treated rats weighed 364 g (91% of initial weight P < .05). Glucose tolerance tests (GTTs) and insulin sensitivity tests were conducted. During insulin sensitivity tests, the area under the curve (AUC0→120) of the time-glucose concns. curves in CrP-treated group were decreased compared with those in the control group (271.4 ± 74.9 v 1,097.4 ± 722.2 mmol/L/min, P < .01). Fasting serum insulin levels in CrP-treated rats were clearly decreased by 46.9% compared with those in the control group (0.52 ± 0.19 v 0.98 ± 0.36 nmol/L, P < .05). During the GTTs, the AUC0→120 for time-glucose concns. curves in CrP-treated group was not significantly different from the control group, but the AUC0→120 of serum insulin concns. in the CrP-treated group were 55.8% lower than those in the control group (123.1 ± 42.5 v 278.2 ± 59.1 nmol/L/min, P < .01). The mean AUC0→120 of time-cholesterol concentration curves during GTTs did not significantly differ between the 2 groups (867.6 ± 155.2 v 827.7 ± 94.3 mmol/L/h, P = not significant [NS]). In contrast, 1-h and 2-h plasma triglycerides were significantly lower in the CrP-treated group, and the mean AUC of the time-triglyceride curve was significantly lower in CrP-treated group than in the control group (3.4 ± 0.5 v 5.9 ± 1.3 mmol/L/h, P < .05). We suggest that Cr supplementation in DEX-treated rats can relatively reverse a catabolic state and increase insulin sensitivity. Our results support the hypothesis that Cr supplementation can be considered to improve carbohydrate and lipid metabolism in patients receiving corticosteroid treatment.

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 15 MEDLINE on STN

ACCESSION NUMBER: 2002379392 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12126463
TITLE: The safety and efficacy of high-dose chromium.
AUTHOR: Lamson Davis S; Plaza Steven M
CORPORATE SOURCE: Bastyr University, Kenmore, WA, USA.. davisl@seanet.com
SOURCE: Alternative medicine review : a journal of clinical therapeutic, (2002 Jun) Vol. 7, No. 3, pp. 218-35. Ref: 101
Journal code: 9705340. ISSN: 1089-5159.
PUB. COUNTRY: United States
DOCUMENT TYPE: (CASE REPORTS)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Consumer Health
ENTRY MONTH: 200209
ENTRY DATE: Entered STN: 20 Jul 2002
Last Updated on STN: 10 Sep 2002
Entered Medline: 9 Sep 2002

AB The data on the standards for chromium requirements and the safety of various chromium compounds and doses are reviewed. The 350-fold difference between the acceptable daily intake and the calculated reference dose for humans of 70 mg per day seems without precedent with respect to other nutritional minerals. Previous claims of mutagenic effects of chromium are of questionable relevance. While studies have found DNA fragmentation (clastogenic effects) by chromium picolinate, anecdotal reports of high-dose chromium picolinate toxicity are few and ambiguous. The beneficial effects of chromium on serum glucose and lipids and insulin resistance occur even in the healthy. Serum glucose can be improved by chromium supplementation in both types 1 and 2 diabetes, and the effect appears dose dependent. Relative absorption of various

chromium compounds is summarized and the mechanism of low molecular weight chromium binding substance (LMWCr) in up-regulating the insulin effect eight-fold is discussed. There is evidence of hormonal effects of supplemental chromium besides the effect on insulin. Chromium supplementation does result in tissue retention, especially in the kidney, although no pathogenic effect has been demonstrated despite considerable study.

L3 ANSWER 5 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2002022399 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11467597
TITLE: Oral chromium picolinate and control of glycemia in insulin-treated diabetic dogs.
AUTHOR: Schachter S; Nelson R W; Kirk C A
CORPORATE SOURCE: Veterinary Medical Teaching Hospital, School of Veterinary Medicine, University of California, Davis 95616, USA.
SOURCE: Journal of veterinary internal medicine / American College of Veterinary Internal Medicine, (2001 Jul-Aug) Vol. 15, No. 4, pp. 379-84. Journal code: 8708660. ISSN: 0891-6640.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200112
ENTRY DATE: Entered STN: 21 Jan 2002 Last Updated on STN: 21 Jan 2002 Entered Medline: 4 Dec 2001
AB Chromium is an essential dietary trace mineral involved in carbohydrate and lipid metabolism. Chromium is required for cellular uptake of glucose, and chromium deficiency causes insulin resistance. Chromium supplementation may improve insulin sensitivity and has been used as adjunct treatment of diabetes mellitus in humans. In this study, 13 dogs with naturally acquired diabetes mellitus were treated with insulin for 3 months, then with insulin and chromium picolinate for 3 months. Dogs weighing <15 kg (33 lb: n = 9) were administered 200 microg of chromium picolinate PO once daily for I month, then 200 microg of chromium picolinate twice daily for 2 months. Dogs weighing >15 kg (n = 4) received 200 microg of chromium picolinate once daily for 2 weeks, then 200 microg twice daily for 2 weeks, then 400 microg twice daily for 2 months. Type of insulin, frequency of insulin administration, and diet were kept constant, and insulin dosage was adjusted, as needed, to maintain optimal control of glycemia. Mean body weight, daily insulin dosage, daily caloric intake, 10-hour mean blood glucose concentration, blood glycated hemoglobin concentration, and serum fructosamine concentration were not markedly different when dogs were treated with insulin and chromium picolinate, compared with insulin alone. Adverse effects were not identified with chromium picolinate administration. Results of this study suggest that, at a dosage range of 20-60 microg/kg/d, chromium picolinate caused no beneficial or harmful effects in insulin-treated diabetic dogs.

L3 ANSWER 6 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2000318849 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10859688
TITLE: Toward practical prevention of type 2 diabetes.
AUTHOR: McCarty M F
CORPORATE SOURCE: Pantox Laboratories, San Diego, USA.
SOURCE: Medical hypotheses, (2000 May) Vol. 54, No. 5,

pp. 786-93.
Journal code: 7505668. ISSN: 0306-9877.
PUB. COUNTRY: SCOTLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200007
ENTRY DATE: Entered STN: 28 Jul 2000
Last Updated on STN: 28 Jul 2000
Entered Medline: 20 Jul 2000

AB Even in individuals who are unwilling to make prudent changes in their diets and sedentary habits, the administration of certain nutrients and/or drugs may help to prevent or postpone the onset of type 2 diabetes. The evident ability of fiber-rich cereal products to decrease diabetes risk, as documented in prospective epidemiological studies, may be mediated primarily by the superior magnesium content of such foods. High-magnesium diets have preventive (though not curative) activity in certain rodent models of diabetes; conversely, magnesium depletion provokes insulin resistance. Epidemiology also strongly suggests that regular moderate alcohol consumption has a major favorable impact on diabetes risk, particularly in women; this may reflect a direct insulin-sensitizing effect on muscle and, in women, a reduced risk for obesity. Chromium picolinate can also aid muscle insulin sensitivity, and initial reports suggest that it is an effective therapy for type 2 diabetes. High-dose biotin has shown therapeutic activity in diabetic rats and in limited clinical experience; increased expression of glucokinase in hepatocytes may mediate this benefit. Other nutrients that might prove to aid diabetic glycemic control, and thus have potential for prevention, include coenzyme Q and conjugated linoleic acids (CLA). Since the nutrients cited here - including ethanol in moderation - appear to be quite safe and (with the exception of CLA) quite affordable, supplementation with these nutrients may prove to be a practical strategy for diabetes prevention. Drugs such as metformin and troglitazone, which are expensive and require regular physician monitoring to avoid potentially dangerous side-effects, would appear to be less practical options from cost-effectiveness, convenience and safety standpoints, given the fact that the population at-risk for diabetes is huge.

L3 ANSWER 7 OF 15 CAPLUS DUPLICATE 3
ACCESSION NUMBER: 1999:429713 CAPLUS
DOCUMENT NUMBER: 131:237796
TITLE: High-dose biotin, an inducer of glucokinase expression, may synergize with chromium picolinate to enable a definitive nutritional therapy for type II diabetes
AUTHOR(S): McCarty, M. F.
CORPORATE SOURCE: NutriGuard Research, Encinitas, CA, 92024, USA
SOURCE: Medical Hypotheses (1999), 52(5), 401-406
CODEN: MEHYDY; ISSN: 0306-9877
PUBLISHER: Churchill Livingstone
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Glucokinase (GK), expressed in hepatocyte and pancreatic β cells, has a central regulatory role in glucose metabolism Efficient GK activity is required for normal glucose-stimulated insulin secretion, postprandial hepatic glucose uptake, and the appropriate suppression of hepatic glucose output and gluconeogenesis by elevated plasma glucose. Hepatic GK activity is subnormal in diabetes, and GK may also be decreased in the β cells of type II diabetics. In supraphysiol. concns., biotin promotes the transcription and translation of the GK gene in hepatocytes; this effect appears to be mediated by activation of soluble guanylate

cyclase. More recent evidence indicates that biotin likewise increases GK activity in islet cells. On the other hand, high-dose biotin suppresses hepatocyte transcription of phosphoenolpyruvate carboxykinase, the rate-limiting enzyme for gluconeogenesis. Administration of high-dose biotin has improved glycemic control in several diabetic animals models, and a recent Japanese clin. study concludes that biotin (3 mg t.i.d. orally) can substantially lower fasting glucose in type II diabetics, without side-effects. The recently demonstrated utility of chromium picolinate in type II diabetes appears to reflect improved peripheral insulin sensitivity - a parameter which is unlikely to be directly influenced by biotin. Thus, the joint administration of supranutritional doses of biotin and chromium picolinate is likely to combat insulin resistance, improve β-cell function, enhance postprandial glucose uptake by both liver and skeletal muscle, and inhibit excessive hepatic glucose production Conceivably, this safe, convenient, nutritional regimen will constitute a definitive therapy for many type II diabetics, and may likewise be useful in the prevention and management of gestational diabetes. Biotin should also aid glycemic control in type I patients.
REFERENCE COUNT: 75 THERE ARE 75 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2000093670 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10628183
TITLE: The role of chromium in nutrition and therapeutics and as a potential toxin.
AUTHOR: Jeejeebhoy K N
CORPORATE SOURCE: University of Toronto, Ontario, Canada.
SOURCE: Nutrition reviews, (1999 Nov) Vol. 57, No. 11, pp. 329-35. Ref: 68
Journal code: 0376405. ISSN: 0029-6643.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200002
ENTRY DATE: Entered STN: 9 Feb 2000
Last Updated on STN: 9 Feb 2000
Entered Medline: 3 Feb 2000
AB Since the 1950s it has been known that chromium is important for the expression of glucose tolerance and that in chromium deficiency the use of glucose is impaired. Chromium has been recognized as an essential nutrient since the finding of low-molecular-weight chromium as a biological modifier of insulin action and the clinical demonstration of deficiency associated with glucose intolerance that responded to the administration of chromium. The major impediment to the use of orally administered chromium is poor absorption of trivalent chromium in its inorganic form. Trivalent chromium is more available in yeast and, more recently, as chromium picolinate for oral absorption. The widespread use of these supplements has resulted in controversy regarding chromium's role as a nutrient, its use for treatment of insulin resistance, and its potential toxicity. This report reviews the evidence for the potential toxicity of chromium supplements in contrast with its usefulness as a nutrient or therapeutic agent in the treatment or prevention of insulin resistance.

L3 ANSWER 9 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 1999:133149 CAPLUS
DOCUMENT NUMBER: 130:336064

TITLE: Complementary measures for promoting insulin sensitivity in skeletal muscle
AUTHOR(S): McCarty, M. F.
CORPORATE SOURCE: Nutrition 21, San Diego, CA, 92109, USA
SOURCE: Medical Hypotheses (1998), 51(6), 451-464
CODEN: MEHYDY; ISSN: 0306-9877
PUBLISHER: Churchill Livingstone
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with 193 refs. Insulin resistance of skeletal muscle is fundamental to both syndrome X and its frequent sequel, type II diabetes. In these disorders, excessive exposure of muscle to free fatty acids (FFAs) and their metabolic derivs. appears to play a prominent role in the induction of insulin resistance. Recent evidence suggests that activation of novel isoforms of protein kinase C (PKC) by diacylglycerol may mediate at least part of the adverse impact of FFAs on muscle insulin sensitivity. Vitamin E and fish oil omega-3s, by promoting the activity of diacylglycerol kinase and inhibiting that of phosphatidate phosphohydrolase, should reduce diacylglycerol levels, thus accounting for their documented favorable impact on insulin sensitivity. Thiazolidinediones such as troglitazone, on the other hand, appear to intervene in the signaling pathway whereby PKC down-regulates insulin function. The insulin-sensitizing activity of chromium picolinate may be attributable, at least in part, to increased expression of insulin receptors. In combination with lifestyle modifications which reduce FFA exposure - weight loss, very-low-fat eating, excessive training - these measures can be expected to work in a complementary way to promote increased nos. of insulin receptors that are more functionally competent. As these measures appear to be safe and well-tolerated, they may have utility for the prevention of diabetes as well as its therapy. When they do not prove sufficient to achieve optimal glycemic control, excessive hepatic glucose output and impaired cell response to glucose can be addressed with metformin and sulfonylureas, resp. The prospects for a rational medical management of type II diabetes, obviating the need for injectable insulin, have never been brighter.

REFERENCE COUNT: 193 THERE ARE 193 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 10 OF 15 MEDLINE on STN
ACCESSION NUMBER: 97424813 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9278926
TITLE: Exploiting complementary therapeutic strategies for the treatment of type II diabetes and prevention of its complications.
AUTHOR: McCarty M F
CORPORATE SOURCE: Nutrition 21, San Diego, CA 92109, USA.
SOURCE: Medical hypotheses, (1997 Aug) Vol. 49, No. 2, pp. 143-52.
Journal code: 7505668. ISSN: 0306-9877.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199710
ENTRY DATE: Entered STN: 21 Oct 1997
Last Updated on STN: 6 Feb 1998
Entered Medline: 7 Oct 1997

AB Impaired glycemic control in type II diabetes results from peripheral insulin resistance, hepatic insulin resistance, and a relative failure of beta cell function.

Nutritional and pharmaceutical measures are now available for addressing each of these defects, presumably enabling a rational and highly effective clinical management of non-insulin-dependent diabetes mellitus. Peripheral insulin resistance, which usually responds to a very-low-fat diet, aerobic exercise training, and appropriate weight loss, can also treated with high-dose chromium picolinate, high-dose vitamin E, magnesium, soluble fiber, and possibly taurine; these measures appear likely to correct the diabetes-associated metabolic derangements of vascular smooth muscle, and thus lessen risk for macrovascular disease. Metformin's clinical efficacy is primarily reflective of reduced hepatic glucose output; this action should complement the benefits of peripheral insulin sensitizers. When these measures are not sufficient for optimal control, beta cell function can be boosted with second-generation sulfonylureas.

L3 ANSWER 11 OF 15 MEDLINE on STN
ACCESSION NUMBER: 96130665 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8569546
TITLE: Anabolic effects of insulin on bone suggest a role for chromium picolinate in preservation of bone density.
AUTHOR: McCarty M F
SOURCE: Medical hypotheses, (1995 Sep) Vol. 45, No. 3, pp. 241-6. Ref: 69
Journal code: 7505668. ISSN: 0306-9877.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199603
ENTRY DATE: Entered STN: 15 Mar 1996
Last Updated on STN: 15 Mar 1996
Entered Medline: 5 Mar 1996
AB Activation of osteoclasts by parathyroid hormone (PTH) is mediated by PTH stimulation of osteoblasts, and is dependent on a PTH-induced rise in protein kinase C activity. Physiological levels of insulin reduce the ability of PTH to activate protein kinase C in osteoblasts, suggesting that insulin may be a physiological antagonist of bone resorption. In addition, insulin is known to promote collagen production by osteoblasts. These findings imply that efficient insulin activity may exert an anabolic effect on bone, and rationalize the many clinical studies demonstrating reduced bone density in Type I diabetes. Recently, the insulin-sensitizing nutrient chromium picolinate has been found to reduce urinary excretion of hydroxyproline and calcium in postmenopausal women, presumably indicative of a reduced rate of bone resorption. This nutrient also raised serum levels of dehydroepiandrosterone-sulfate, which may play a physiological role in the preservation of postmenopausal bone density. The impact of chromium picolinate (alone or in conjunction with calcium and other micronutrients) on bone metabolism and bone density, merits further evaluation in controlled studies.

L3 ANSWER 12 OF 15 MEDLINE on STN
ACCESSION NUMBER: 95139846 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7838010
TITLE: Enhancing central and peripheral insulin activity as a strategy for the treatment of endogenous depression--an adjuvant role for chromium picolinate?.
AUTHOR: McCarty M F
CORPORATE SOURCE: Nutrition 21, San Diego, California 92109.
SOURCE: Medical hypotheses, (1994 Oct) Vol. 43, No. 4,

pp. 247-52.
Journal code: 7505668. ISSN: 0306-9877.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199503
ENTRY DATE: Entered STN: 14 Mar 1995
Last Updated on STN: 3 Mar 2000
Entered Medline: 2 Mar 1995

AB Depression is often associated with insulin resistance , owing to cortisol overproduction; conversely, many studies suggest that diabetics are at increased risk for depression. Recent evidence indicates that insulin is transported through the blood-brain barrier and influences brain function via widely distributed insulin receptors on neurons. These receptors are particularly dense on catecholaminergic synaptic terminals, and, while effects are variable dependent on brain region, several studies indicate that insulin promotes central catecholaminergic activity, perhaps by inhibiting synaptic re-uptake of norepinephrine. Additionally, it is well known that insulin enhances serotonergic activity in increasing blood-brain barrier transport of tryptophan. Since impaired monoaminergic activity in key brain pathways is believed to play an etiological role in depression, techniques which promote effective insulin activity, both centrally and peripherally, may be therapeutically beneficial in this disorder. This may rationalize anecdotal reports of improved mood in clinical depressives and diabetics receiving the insulin-sensitizing nutrient chromium picolinate. This nutrient, perhaps in conjunction with other insulin-sensitizing measures such as low-fat diet and aerobic exercise training (already shown to be beneficial in depression), should be tested as an adjuvant for the treatment and secondary prevention of depression.

L3 ANSWER 13 OF 15 MEDLINE on STN
ACCESSION NUMBER: 94118918 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8289694
TITLE: Homologous physiological effects of phenformin and chromium picolinate.
AUTHOR: McCarty M F
CORPORATE SOURCE: Nutrition 21, San Diego, CA 92109.
SOURCE: Medical hypotheses, (1993 Oct) Vol. 41, No. 4, pp. 316-24. Ref: 75
Journal code: 7505668. ISSN: 0306-9877.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199402
ENTRY DATE: Entered STN: 12 Mar 1994
Last Updated on STN: 12 Mar 1994
Entered Medline: 22 Feb 1994

AB The insulin-sensitizing drug phenformin, in addition to its clinical utility in type II diabetes, has been reported to lower blood lipids, reduce body fat, enhance cellular immunity, and--in rodents--to increase mean lifespan and retard the development of growth of cancer. Initial studies with the insulin-sensitizing nutrient chromium picolinate indicate that it aids glucose tolerance in type II diabetes, lowers elevated LDL cholesterol, reduces body fat while increasing lean mass, and--in rats--increases median lifespan. These effects are thus analogous to those reported for phenformin; chromium picolinate should be tested to determine whether it likewise has a favorable impact on cellular immunity and cancer

risk. The ability of both phenformin and chromium picolinate to increase lifespan suggests that age-related insulin resistance may play a profound role in the aging process. It may not be coincidental that caloric restriction--the best documented technique for increasing lifespan--markedly increases insulin sensitivity. Safe, appropriate measures for promoting lifelong insulin sensitivity include a low-fat diet, exercise training, and supplemental chromium picolinate.

L3 ANSWER 14 OF 15 MEDLINE on STN
ACCESSION NUMBER: 94118917 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8289693
TITLE: Insulin resistance in Mexican Americans--a precursor to obesity and diabetes?.
AUTHOR: McCarty M F
CORPORATE SOURCE: Nutrition 21, San Diego, CA 92109.
SOURCE: Medical hypotheses, (1993 Oct) Vol. 41, No. 4, pp. 308-15. Ref: 115
Journal code: 7505668. ISSN: 0306-9877.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199402
ENTRY DATE: Entered STN: 12 Mar 1994
Last Updated on STN: 12 Mar 1994
Entered Medline: 22 Feb 1994
AB Mexican Americans appear to have a strong genetic predisposition to insulin resistance, android obesity, and type II diabetes, apparently as a function of Native American genetic heritage. Theoretical considerations suggest that insulin resistance may be a primary factor that plays a causative role in the induction of both obesity and diabetes. Measures which promote optimal insulin sensitivity--chromium picolinate, brewer's yeast, soluble fiber supplements, metformin, very-low-fat diet, exercise training--may have value for preventing, treating, or retarding the onset of obesity and diabetes, and merit clinical evaluation in this regard. Correction of insulin resistance may also lessen cardiovascular risk, in part by reducing LDL cholesterol and improving risk factors associated with Syndrome X. These comments are likely to be valid for other Native American groups at high risk for diabetes.

L3 ANSWER 15 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:648691 CAPLUS
DOCUMENT NUMBER: 119:248691
ORIGINAL REFERENCE NO.: 119:44363a,44366a
TITLE: Hypothesis: sensitization of insulin-dependent hypothalamic glucoreceptors may account for the fat-reducing effects of chromium picolinate
AUTHOR(S): McCarty, Mark F.
CORPORATE SOURCE: Nutr. 21, San Diego, CA, 92109, USA
SOURCE: Journal of Optimal Nutrition (1993), 2(1), 36-53
CODEN: JOTNEV; ISSN: 1061-2130
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Cr picolinate offers an effective means of exploiting the insulin-sensitizing actions of the trace nutrient Cr. Controlled studies have assessed the effects of Cr picolinate on body composition and demonstrate

a trend toward increased lean mass and reduced body fat. The reduction in body fat appears paradoxical in light of insulin's tendency to promote the storage, retention, and synthesis of fat. It is proposed that Cr picolinate's action in this regard results primarily from sensitization of insulin-dependent glucoreceptor neurons in the ventromedial hypothalamus (the so-called satiety center). Activation of these glucoreceptors promotes hunger control, stimulates thermogenesis via activation of the sympathetic nervous system, and down-regulates insulin secretion actions, which should lead to a more neg. caloric balance and loss of body fat. Hyperinsulinemia may often be indicative of underactive hypothalamic glucoreceptors; correction of hyperinsulinemia with effective Cr supplementation suggests improved glucoreceptor function, which should be beneficial for weight control. The fat-reducing effects of Cr picolinate are consistent with previous suggestions that insulin resistance plays a pathogenic role in obesity. Cr picolinate may interact synergistically with a low-fat diet and regular exercise to promote a leaner physique and, moreover, may have a highly pos. impact on cardiovascular health.

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